

00-114

Verizon
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Washington, D.C. 20005
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Shawn Donnelly
Staff Manager - Federal Regulatory



August 21, 2000

Mr. Dale Hatfield
Chief - Office of Engineering and Technology
Federal Communications Commission
445 12th Street, SW
Room 7-C155
Washington, DC 20554

Re: Final Service Outage Report

Dear Mr. Hatfield:

In accordance with the requirements in CC Docket 91-273, enclosed is the Final Service Disruption Report for the Verizon service outage that occurred on July 21, 2000 affecting Morristown, New Jersey.

Please call me if you have any questions about this report or other service outage issues.

Sincerely,

A handwritten signature in cursive script that reads "Shawn Donnelly".

Enclosure

cc: R. Kimball

WIRE LINE OUTAGE REPORTING TEMPLATE

Reporting Carrier Verizon	Date of Incident 7/21/2000
Time of Incident 14:18 PM	Geographic Area Affected Morristown, New Jersey
Services Affected <div style="display: flex; justify-content: space-between;"> <div> IntraLATA Intraoffice IntraLATA Interoffice InterLATA Interoffice E911 </div> <div> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> </div> </div>	Number of Customers Affected 87,435 Number of Blocked Calls 125,689 Outage Duration 3 Hrs 48 Mins
Background of the Incident <p>On July 21, 2000 at 14:18 PM, the Morristown Central Office (CO) (MRTWNJMRDS5) experienced a total system outage. This CO consists of 76 Switch Modules (SM) including 8 SM 2000 modules. During the weeks before this incident, Lucent was doing a job to transfer the Morristown 5ESS switch to a new power plant. A detailed Method of Procedure (MOP) covered this major project. During the early morning shift on July 21, the vendor crew successfully transferred circuits and cut the dead 750 kcm power cables, however, they did not heat shrink protective end caps on the hot end of the cut cables. The day shift technicians were instructed to complete this work and perform minor cable racking and iron work. The vendor technicians encountered some difficulty with the cable racking and decided that removing the dead cable would facilitate the installation. The technicians incorrectly identified a live cable as a dead one, and, when the technician initiated the cut, the cable cutters grounded against the iron cable rack. This caused a current surge to the power plant and tripped the 225 amp breaker, resulting in a loss of power to the 5ESS switch Communication Module (CM).</p> <p>The initial report to the CO technicians indicated a Common Channel Signaling System 7 (CCS7) failure however; the (CM) was completely out of service with no power to the active or standby side. After noticing alarms in the Global Power Distribution Frame, the technicians decide to check the power plant. On the way to the basement, they met the vendor technicians who informed them of the tripped breaker. Under the Electronic Systems Assistance Center (ESAC) guidance, the 225 amp breaker was restored at 14:57 PM and the technicians began the recovery process by restoring the Administrative Module (AM) and the CM. By 15:07 PM, call processing was restored for approximately 19,935 lines, but service was still severely degraded due to continued power problems in the heavily populated SM 2000s. Communications to 5 of the 8 SM 2000s began restoring at 15:33 PM and by 15:43 PM, approximately 37,000 additional customers were restored. Call processing overloads in the last 3 SM 2000s with a total of 30,500 access lines, prevented the normal restoration methods. These SM's required full initializations that were completed by 18:06 PM when full service was restored to the switch.</p>	

Subsequent analysis indicates, the switch power converters possibly shut down or failed to function when the office battery voltage dropped below the minimum operating voltage for the power converters. Below 39.5 vdc, the converters will either shut off or stop functioning. This voltage drop occurred before the circuit breaker tripped as a result of the load imposed onto the battery plant due to the hard short to ground.

Direct Cause

Procedural – System Vendor – Failure to follow standard procedures and documentation

Root Cause

Procedural/System Vendor - Insufficient Supervision/Control

Name and Type of Equipment

Lucent 5 ESS

Specific Part of the Network Involved

Local Switch

Methods Used to Restore Service

The power plant breaker was reset, restoring the power converters in the CM. This allowed the AM processor to initialize and the office to restore to a workable configuration. A manual initialization was required on 3 SM's.

Steps Taken to Prevent Recurrence of the Incident

- Lucent Technologies stopped all work activities on July 24 in the New Jersey operating area and reviewed the "Service Protection Requirements" with every installer.
- The power converters were returned to Lucent for re-creation of the incident in their Lab Environment.
- A grounding survey will be conducted for the Morristown CO.

Evaluation of Best Practices

The following "Best Practice" recommended by the Network Reliability Council in their report "Network Reliability: A Report to the Nation," applies to this outage: Section E, Paragraph 6.8.2.2, Installation/Removal Work, relating to method of procedure and installation guidelines.

Following the MOP regarding approved and proven cable removal procedures would have prevented this occurrence.

Contact Person

Shawn Donnelly

Telephone Number of Contact Person

202-336-7892

00-114

**BELL ATLANTIC
FCC NETWORK DISRUPTION
INITIAL REPORT****TICKET #: 94K-FJR**

1. **DATE AND TIME OF INCIDENT:** 07/21/2000 02:18:00 PM
2. **GEOGRAPHIC AREA AFFECTED:** morristown, nj & vicinity
suburban nj manager area
3. **MAXIMUM NUMBER OF CUSTOMERS AFFECTED:** 87435
4. **TYPE OF SERVICES AFFECTED:**
- ☐ EMERGENCY-SERVICE ☒ INTERLATA ☐ OTHER
☐ INTRALATA ☐ 800 SERVICES
5. **DURATION OF OUTAGE:** 51 minutes
6. **ESTIMATED NUMBER OF BLOCKED CALLS:** To be determined at Root Cause Analysis
- 7A. **TYPE EQUIPMENT:** CNI Ring **VENDOR:**
- 7B. **APPARENT OR KNOWN CAUSE OF INCIDENT:**
Possible blown fuse in SESS Central Office power plant. Affected CNI Ring causing SS7 Isolation.
8. **METHOD USED TO RESTORE SERVICE:**
Replaced fuse
9. **STEPS TAKEN TO PREVENT RECURRENCE:**
To be determined at Root Cause Analysis.

Pursuant to Section 0.459 (b) of the Commission Rules, and for reason set forth below,
confidentiality is requested for items:
Reason for confidentiality:

☐ A Request to supplement the showing requested by section 0.459 (b) is hereby made and will be
submitted expeditiously.

Request Supplement:

DATE AND TIME OF REPORT: 07/21/2000 03:55:14 PM

CONTACT AND TELEPHONE #: Marianne Sweeney 873-649-7440

NOTE: Retention period is 5 Years